RMT

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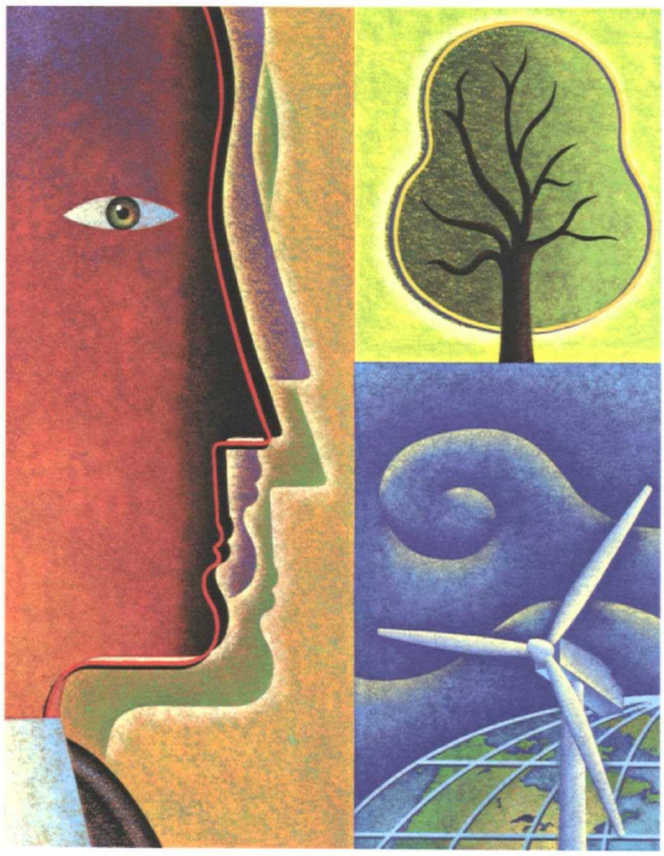
Quality Management Plan (QMP)

For
RMT, Inc.

Prepared in Connection with the
Dayco Corporation / L. E. Carpenter Superfund Site

August 2009



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Nicholas J. Clevett LEC Project Coordinator & Senior Client Service Manager RMT, Inc.	8/10/09 Date	Derek Johnson General Manager & Vice President Environmental Business Unit RMT, Inc.	8/09/09 Date

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Section 1
Introduction

This Quality Management Plan (QMP) describes the quality management philosophy and systems of RMT, Inc. (RMT). This QMP further reflects RMT's core value of a commitment to excellence that has the basic underlying tenet that "good enough" is not acceptable. As such, the majority of RMT quality management programs have been embedded in the project delivery systems. These systems are supplemented by policies, practices, and guidelines, as well as the organizational structure, which have been developed to support and enable excellent quality performance from the client-focused project delivery teams.

The QMP documents these activities and illustrates RMT's overall commitment to excellence and quality in all aspects of environmental engineering work, including the collection and evaluation of environmental data. The plan highlights aspects of RMT's programs that are needed to provide a quality product, and then summarizes the necessary checks and balances in place to maintain the quality of our various work products.

As suggested in the United States Environmental Protection Agency (USEPA) Requirements for Quality Management Plans, USEPA QA/R-2, March 2001 (EPA/240/B-01/002), this QMP has been organized into the following 11 sections:

1. Introduction
2. Management and Organization
3. Quality System Components
4. Personnel Qualifications and Training
5. Procurement of Items and Services
6. Documents and Records
7. Computer Hardware and Software
8. Planning
9. Implementation of Work Processes
10. Assessment and Response
11. Quality Improvement

Each section presents a summary of RMT's related activities and approaches to quality management.

Section 2
Management and Organization

2.1 RMT and Quality Management

Quality management is a core component of RMT's business practices, and a fundamental RMT process that results in high-level services for our clients. Quality management begins with the dedication and commitment of RMT's Client Service Manager (CSM) and the client's project team to ensure quality outputs, value-added strategy, and quality services.

As part of the corporate quality management philosophy, RMT policy requires that quality assurance activities be included in all environmental projects. These projects include environmental consulting services, turnkey construction management activities, and technology development programs. A project Quality Assurance/Quality Control (QA/QC) Plan is prepared and completed prior to implementation of every environmental project at RMT to ensure that the individuals responsible to perform the quality reviews are informed that the project is active and being implemented. This plan is then distributed to the project team so all members of the project team clearly understand the quality assignments and process.

At RMT, we believe quality management is directly linked to promoting high performance by RMT's people, which results in outstanding service to our clients. High performance is achieved when people are motivated and recognized for their accomplishments. RMT employees are highly motivated by working on challenging projects for clients they respect. The CSM handpicks the team for each of the client's projects to best serve the client's needs. These project team members are recognized within RMT and are proud to be working with the client's team.

These motivated project teams are committed to developing quality outputs and high-end strategy, to maintaining budgets and achieving overall project savings, and to continuously improving service to our clients.

Quality assurance and quality control procedures include early identification and involvement of appropriate client team members, RMT's QA Officers, and the CSM. This combined client-RMT QA team is responsible for strategy development and follows through with the detailed project execution. This partnering relationship allows early identification of objectives and issues important to the client and improves communication and flexibility in the project execution. This "team approach" QA process results in high-quality outputs and also improves RMT's ability to meet or exceed the client's expectations.

2.2 Organization Structure and Quality Implications

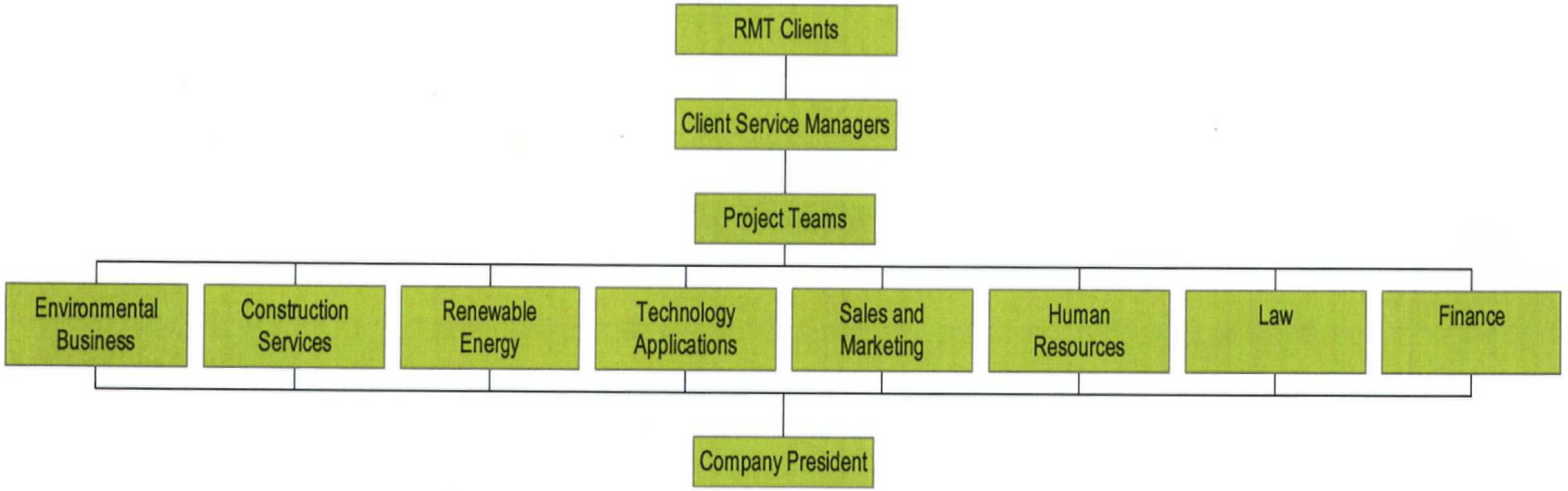
2.2.1 Overview of RMT's Corporate and Quality Organization

RMT's corporate structure is illustrated on Figure 2-1. This figure presents our commitment to clients and their project activities. RMT's formal reporting structure is represented on Figure 2-2 and encompasses office-based operations in approximately 15 locations. The quality organization is developed on a project-by-project basis except for the senior quality officers. For the LEC QMP, the Quality Manager, Nicholas Clevett, who is located in RMT's Grand Rapids MI office and the Quality Executive Manager, is Derek Johnson, who is located at RMT's Corporate Headquarters in Madison WI. Depending upon the project type and client, the role of quality manager may be filled by different senior-level staff from RMT. For all LEC projects, Mr. Clevett is the Quality Manager. As Quality Manager, Mr. Clevett is responsible for reviewing all deliverable documents for LEC work as well as for responding to any work implementation quality problems or other project/quality issues. The role of Quality Executive Manager will be filled by Derek Johnson for all RMT project activities within the Environmental Business Unit. His responsibilities include ensuring proper staff support to prevent or address a quality concern as well as mediating any quality-related disputes between the team members both inside and outside of RMT.

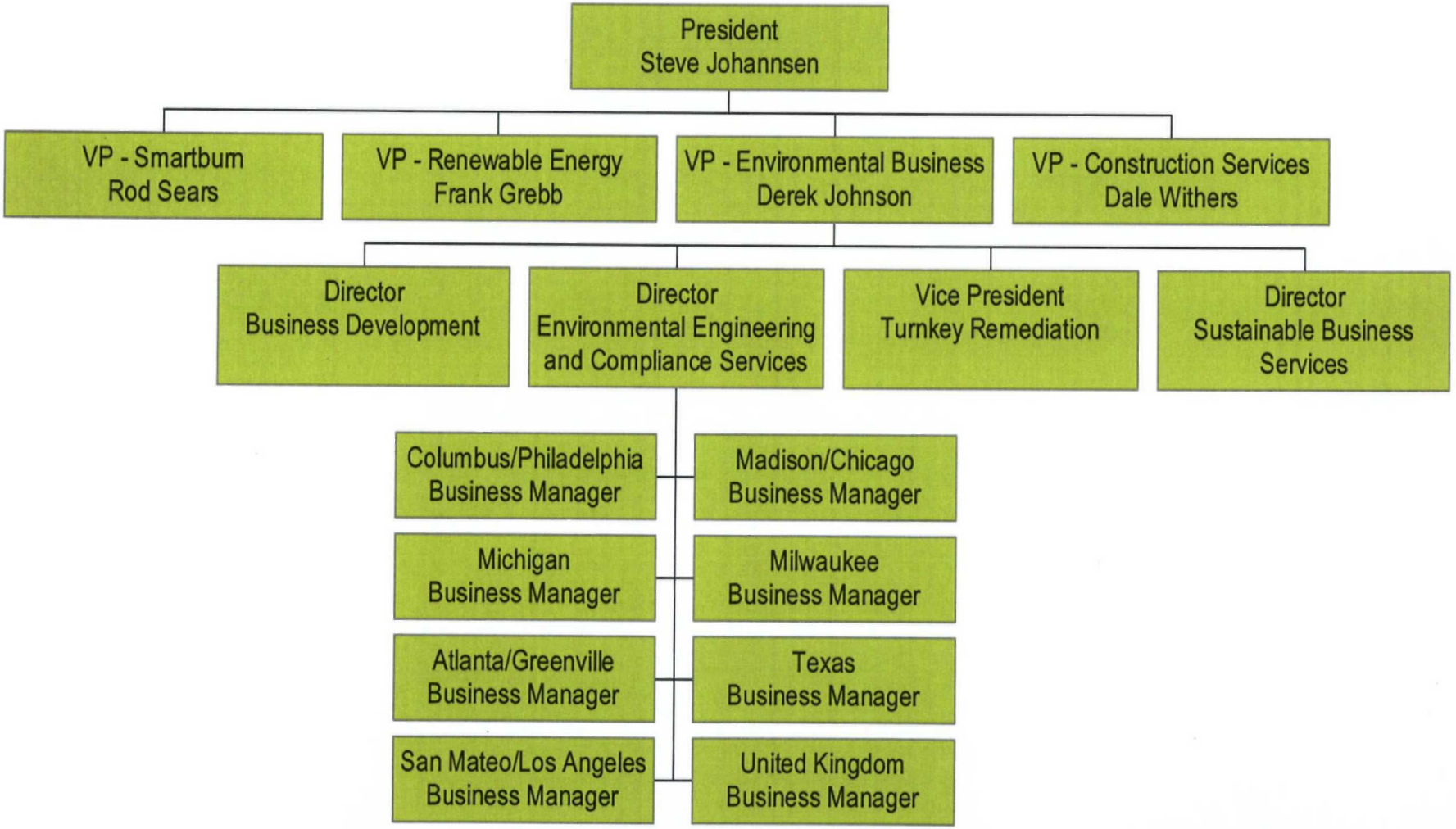
RMT's office-based operating structure complements the over-arching quality program by providing a specific point of entry to management for all staff at the local level. The quality system is further complemented by the project-by-project and client-by-client teams who strive for the high value and quality-based outcomes for each project challenge. The project manager can perform the quality review if the subject is within his/her expertise. If not, a separate quality assurance team member is designated. Project- and client-based quality assurance is reinforced through the client service manager (CSM) position. The CSM works with the project manager and the remainder of the technical team to review various workplans and reports at pre-established milestones along the way and then incorporates quality review prior to release of the document outside of RMT.

Disputes regarding quality issues are rare since the importance of a quality-based outcome is integrated into the approach to the project activity and since excellence is a core value at RMT. However, if a dispute arises, the disputing parties meet with the project manager and CSM. If the issue is not then resolved to the satisfaction of the parties, the issue is brought to the attention of the Vice President of the Environmental Business Unit in his role as Senior Quality Manager.

RMT Corporate Structure



RMT Operational Structure



2.2.2 Detailed Description of Corporate and Quality Management Roles

The company and the overall operation is managed by regionally designated Business Managers located in key geographic locations. These Business Managers report to Market Focused Area Directors, who report to Business Unit Vice Presidents, who in turn report to the President of RMT. Strategic planning and business portfolio direction are coordinated through a 9-member Executive Committee (EC). RMT is part of Alliant Energy Resources, a nonregulated business of the Alliant Energy Company, headquartered in Madison, Wisconsin.

Quality is embedded in the operational structure, and all senior management and technical staff have specific quality requirements included in their performance goals and advancement programs. Overall, corporate quality management is the responsibility of the General Manager and Vice President of the Environmental Business, a position currently held by Derek Johnson, who is located in RMT's Madison, Wisconsin, office. Derek Johnson reports directly to the President of RMT.

The market focused area directors are responsible for developing and implementing quality assurance programs appropriate for each of the four (4) areas. These programs include the following:

- Policies and procedures for project planning
- Policies and procedures for collection, validation, management, use, and reporting of data and production of deliverables
- Policies and procedures for assignment of staff to projects
- Policies and procedures for qualification of vendors
- Project and data assessment programs
- Staff and project management training and assessment programs

Project-specific quality assurance programs are the responsibility of the Client Service Manager (CSM) and the Project Manager (PM). The programs include the following:

- Identification of appropriate data quality objectives
- Selection of appropriate procedures for the collection, validation, management, use, and reporting of data, and the production of work products
- Selection of qualified staff
- Selection of qualified vendors and subcontractors
- Selection of data validation approaches

- Documentation of project quality assurance program, as needed to meet project requirements
- Project quality assessment

Independent reviews of the quality programs and outputs are performed through the RMT "Six Sigma" Program (still using??) and through internal evaluations and assessments. A thorough review of the project approach or outputs, called a "Red Team Review," is convened by the CSM or other senior team member as merited by the project issues, if requested by a client, or if deemed appropriate by the CSM. The results of these reviews are distributed to the CSM, the project team, the applicable supervisor, and even the Business Management Team, as appropriate.

2.3 Client Service Manager Responsibilities

RMT has implemented a Client Service Manager (CSM) Program to improve our ability to understand and to anticipate client needs. The CSM is available to the client as a single point-of-contact, as needed. By establishing a close, long-term relationship with our key clients, RMT staff members also gain a better understanding of each client's corporate culture. This enhances our ability to provide high-quality services to these clients. The roles and responsibilities of the CSM are as follows:

- Act as an extension of the client to ensure that the client's needs and expectations are understood and met.
- Ensure that RMT's best available services, technologies, and capabilities meet the client's needs.
- Facilitate pathways through RMT's operating structure and systems on behalf of the client.
- Lead RMT's team to satisfy the client in all respects.
- Provide client feedback to RMT on changing needs, trends, expectations, and satisfaction.
- Keep the client informed of significant issues (regulations, new technologies, etc.).
- Develop and update client profiles.
- Prepare and update client needs assessments and development.
- Provide leadership, and ensure that appropriate staff is assigned to carry out responsibilities.
- Organize project management teams to best fit the project.
- Communicate client policies, standards, and expectations to RMT's project delivery team.
- Assist in scoping proposals, and participate in project kickoff meetings.

- Attend milestone meetings and conference calls to monitor project progress and to ensure that RMT is providing the best value for the dollar.
- Ensure that a QA/QC process is in place to verify that the client's needs and expectations are being met with all proposals and service deliverables.
- Organize team progress reviews as needed to coordinate internal communications, delivery of services, and sales to the client's organization.
- Assist Project Managers in overcoming project obstacles, and mentor Project Managers on client communications and conflict resolution.
- Conduct periodic meetings with the client to monitor project schedules, and project performance and quality, including quality improvement forums between the client and RMT staff.
- Provide behavior and performance assessments to the Project Manager's supervisor periodically during the course of every project.
- Delegate responsibilities as appropriate to RMT staff designated as "local site client service managers."
- Periodically survey the client's satisfaction with RMT's performance, monitor trends and needs within the client's organization, and constantly look across RMT and the client's organization for service opportunities and geographic fits.

2.4 Focused Review

RMT will focus all work through the CSM, utilizing a limited number of Project Managers. As these individuals develop an understanding and an awareness of the client's preferences, procedures, and processes, this information will be incorporated into the client profile document, as discussed below. Each completed project will be documented as to the scope, approach, and results. This information will then become part of the information available to staff working on future projects.

In addition to routinely assessing the client's needs and expectations, the CSM will also work closely with the client's staff to customize communication vehicles and work systems. An electronic *Client Service Handbook* will outline the client's preferred methods for addressing administrative activities and communicating project issues and status. The contents of the handbook will be shared with all staff working with the client.

For projects that include significant team members who have not previously worked on the client's projects, the CSM will provide briefing/oversight sessions prior to substantial project involvement by the team member. The CSM will verify that the individual has reviewed and understands the information included in the Client Profile. In the case of Project Managers and

key technical staff, this briefing will be detailed and will include a discussion of their understanding of the specific project scope and expectations.

Section 3
Quality System Components

The principal components of RMT's quality system include systematic planning of projects, project-specific quality documentation, project and data assessments, and management oversight and reviews of these project quality systems.

Systematic planning of projects proceeds from a request for proposal/quotation (RFP/RFQ) through scope of work development to workplan preparation, through project implementation.

Project quality objectives are typically specified in the RFP/RFQ, or are developed during the project proposal/scoping phases, based on project objectives and the type of technical services to be provided. Project quality objectives are translated into project quality systems and procedures during preparation of workplans; QAPPs; and/or specified standard procedures for data acquisition, generation, and use activities.

Project quality objectives and the systems and procedures by which those objectives will be achieved are documented primarily in workplans and QAPPs. Supporting documentation (included or by reference) includes company written policies, operating procedures, standards, and guidance, as well as written policies, procedures, and methods published by regulatory agencies and independent standardization bodies, such as the American Society for Testing and Materials (ASTM).

Data requirements and assessment procedures are based on the project technical and quality objectives established during project planning, as discussed above. These procedures and requirements are documented in workplans, QAPPs, and specified standard procedures for each project. Data assessments are conducted by the project PM, project QA/QC staff, or designee, based on the degree of independence required by project objectives. Protocols utilized for the assessment are based on applicable federal and/or state regulatory guidance, documented industry standards, and the project scope of work.

Independent reviews of the quality system are performed through the RMT Six Sigma Program and through internal evaluations and assessments. These programs fall under the responsibility of the Vice President of Environmental. A thorough review of the project approach, called a "Red Team Review," is covered by the CSM or PM, as required by project issues or client requests.

Development, review, and revisions of the Quality Management Plan (QMP) are ultimately the responsibility of the Vice President of Environmental or his designee. Preparation and internal reviews and revisions of the QMP are performed by senior staff, with final reviews and approvals being performed by senior management and the Vice President of Environmental. Periodic reviews of the QMP are overseen by the Vice President of Environmental and will be conducted by designated senior staff.

The RMT tools used to implement the quality system include the following:

- Quality Management Plan
- Written policies
- Manuals
- Guidance documents
- Project-specific QA project plans

The quality system at RMT is based on the guidelines established by the Professional Engineers in Private Practice Division of the National Society of Professional Engineers, which are incorporated into RMT's Quality Assurance/Quality Control Manual (dated July 6, 1991).

The purpose of the Quality Assurance Program is to establish and document methods to ensure that the design requirements

- are correctly translated into high-quality reports, plans, drawings, specifications, and accurate cost estimates;
- comply with the requirements of the client's contract; and
- fulfill the needs of the client and the users of the client's facilities.

The primary responsibility of the Quality Assurance Program for a contract rests with the RMT quality assurance designee and the Project Manager. The overall responsibility for ensuring that the established quality control procedures are addressed lies with the RMT quality assurance designee, who provides oversight on logic and approach and on consistency and quality of work performance.

The Project Manager is responsible for the project budgets and schedules, and for the fulfillment of the contract requirements. The Project Manager serves as the point of contact and provides the coordination and overall direction of the project team. The Project Manager also provides an ongoing overview of the project to ensure that project requirements and deadlines are being met and maintains contact with the client to make sure that the project is being completed to meet or exceed expectations.

RMT's standard approach to work includes internal procedures for independent quality control and quality assurance reviews. Major components of RMT's QA/QC process are as follows:

- A written QA/QC plan is developed for all new projects, which establishes roles and responsibilities for each technical element of a project. Senior technical staff involvement on a project includes the following:
  - Providing oversight on logic and approach
  - Ensuring consistency of work product with respect to RMT's standards of practice and office procedures
  - Ensuring that the work performed is consistent with the approved workscope, budget, and schedule
- Each project, or each major element of large projects, requires a kickoff meeting that includes key technical staff who work on the project and the QA/QC staff who are assigned to provide oversight. The kickoff meeting may include, but is not limited to, the following topics:
  - Client requirements and expectations
  - Project schedule
  - Project budget (handouts include the final scope of services)
  - QA/QC responsibilities
  - Project assignments
  - Project issues
  - Health and safety issues
- Project team meetings are held on a weekly, monthly, and/or quarterly basis to discuss and resolve issues such as the following:
  - Quality
  - Technical and client concerns
  - Budget
  - Schedule
  - Scope
- Peer-level review is performed on work products such as computations, soil boring logs, and subcontract preparation.
- An internal findings and conclusions meeting is held with the Project Manager, technical staff, and QA Reviewers after the data are organized, but before the text is written and a preliminary assessment of the significance is made.

Internal drafts of workplans and reports are reviewed by appropriate senior technical QA staff and the Project Manager before being issued to the client.

Policies, procedures, and standards published by regulatory agencies or independent certifying bodies are also key tools for both developing and implementing components of RMT's quality assurance system. Representative examples of these tools are as follows:

- Guidance for preparing standard operating procedures (SOP), EPA QA/G-6, EPA/240/B-01/004
- Guidance for the data quality objectives process, EPA AQ/G-4, EPA/006/R-96/055
- Data quality objectives process for hazardous waste site investigations, EPA AQ/G-4HW, EPA/600/R-00/007
- EPA guidance for quality assurance project plans, EPA QA/G-5, EPA/600/R-98/018
- USEPA contract laboratory program, national functional guidelines for inorganic data review, EPA 540/R-99/008
- Guidance for contract deliverables, Appendix C: quality assurance project plan (QAPP), AFCEE QAPP, HQ Air Force center for environmental excellence
- ASTM D5157-97 Standard guide for documenting the standard operating procedures for the analysis of water
- ASTM D5283-92 (1997), Standard practice for generation of environmental data related to waste management activities: quality assurance and quality control planning and implementation
- ASTM D5612-94 (1998), Standard guide for quality planning and field implementation of a water quality measurement program
- ASTM D5792-02, Standard practice for generation of environmental data related to waste management activities: development of data quality objective

Additional guidance from individual state environmental agencies and EPA regional offices are also used as appropriate to work performed at specific sites.

Section 4
Personnel Qualifications and Training

RMT has assembled a premier team of highly motivated professionals. Our engineers and scientists offer expertise in the full range of technical disciplines typically required for projects involving environmental, structural, electrical, mechanical, and chemical issues. The foundation for quality at RMT is hiring well trained and professional staff. New staff is immediately introduced to RMT's philosophy that quality begins with them and that "good enough" will not achieve our goals. To foster quality improvement, RMT's Career Navigation Program provides personalized training, mentoring, and focused annual reviews. The expertise of RMT professionals is continually expanded through on-the-job training, individual training programs, and seminars. Additional higher education is promoted through a Tuition Reimbursement Program.

Specific quality training and retraining needs associated with changing requirements are identified through several mechanisms. These include the employee or his/her immediate supervisor who determine that a specific skill set needs to be refined or added to allow the individual to be successful; the client manager team, who identifies a client need that requires staff to have additional quality training; and the internal RMT Business Management Team who assesses the requirements for updated quality training based upon risk management concerns. These training needs are then incorporated into the business planning cycle as budget items for the following year. Furthermore, if additional, unplanned training is required on a more immediate basis, then individual approvals can be requested through supervisors.

4.1 Career Navigation Program

RMT is committed to fostering a culture that embraces change and adapts quickly to problems and issues, while still providing a quality product. A quality product can only be achieved with a team of engaged and motivated employees. To help create this dynamic workforce, we have invested in our most valuable asset, RMT people, through the creation of the *Career Navigation Program*.

Whether our clients are internal or external, every RMT employee is a consultant. The multidimensional *Career Navigation Program* is designed to provide RMT employees with the tools they need to be effective consultants and increase their value to the company. While this program emphasizes horizontal growth, career redirection, and skill enrichment, it also incorporates elements of the more traditional vertical growth career model.

The value of this program is that it is applicable to each and every RMT employee, regardless of title or position. All employees have the opportunity to assess their careers, define their goals, and create a plan to reach those goals. All employees are challenged to develop skills and talents that provide value to clients and to the company. All employees are encouraged to align their personal growth with characteristics of effective consultants. As a result, all employees have the opportunity to experience personal growth that will also result in RMT's growth.

4.2 Overview of Employee Performance Review

The employee review and goal-setting process is designed to meet several needs. These needs are as follows:

- Providing the employee with meaningful feedback on performance and accomplishments
- Providing a foundation for establishing and communicating future opportunities, responsibilities, and performance expectations
- Planning and implementing programs to meet individual, departmental, and organizational needs, including planning individual attendance at specific technical, safety, and quality training

4.2.1 Performance Review

The performance review process, and the forms related to the performance review process, serves to help managers and employees prepare for the review so that the goal of fulfilling the needs listed above are accomplished. However, the central purpose of the entire process is to have candid and meaningful communication with employees about our expectations of them (goals and other job expectations), their perception of their performance against those expectations (self-evaluation), and our evaluation of their performance relative to these same expectations (peer review and manager's review).

The processes that form the core of the procedure are as follows:

- Employee self-evaluation
- Peer review - a 360 degree evaluation process
- Goal setting
- Meaningful face-to-face discussion
- Performance review documentation

4.2.2 Goal Setting

Each year, RMT employees have four or five key goals that are posted in the employee's work area as a reminder that these important areas need focused attention during the year. Additionally, employees establish other goals to address areas of emphasis, development, or needed attention. These are combined with the key goals and are used to measure progress during the year and as a foundation for employee reviews.

Goal setting is directly linked to the review process as part of a continuing cycle. Expectations are created by goals, and performance is reviewed relative to the accomplishment of these goals. The review process continues by identifying areas of emphasis and needed attention in the upcoming review period. These form part of the basis for goal setting.

Critical to the success of any performance management program is the integration of individual employee goals into the evaluation process. RMT's employee review and goal-setting process has been designed to recognize individual growth and development as well as overall contributions to the organization. Performance is evaluated by measuring individual contributions in areas of goal achievement and position expectations. In this way, both employees and RMT benefit by a process that has both parties identifying needs and expected results and consolidating them into a single set of expectations.

4.3 Training and Professional Development

RMT staff actively participates in a variety of trade association committees and conferences to stay abreast of industry's changing needs and expectations. RMT staff has also been invited to participate in various environmental committees and seminars. The workplace is a rapidly changing environment. Through the Career Navigation Program, it may become evident that employees need to attend certain seminars to become knowledgeable in the latest technological advancements or regulatory changes. Individualized training programs may also be recommended to broaden an individual's expertise for a specific project or work area. This individual training may be identified during the course of routine performance reviews by the employee's supervisor, or it may be identified for a specific project need by the CSM or PM. Additional training or retraining as a result of changing requirements would be determined in the same way by the same management team members. After completion of seminars or individual programs, employees are encouraged to share the information they learned in brown-bag discussions. Additional brown-bags may include meetings with industry representatives and discussions on new regulatory changes.

4.4 Project Manager Training

RMT is committed to continually improving its project management practices and to upgrading the knowledge, skills, proficiency, and variety of experiences of its Project Managers. RMT has various tools and guidance documents to assist Project Managers. These tools include the Project Manager Toolbox; the Deltek Vision project financial management system and its reports, policies, and procedures; standard contracts and subcontracts; and manuals. Project Manager training is also performed by senior mentoring staff and through various Project Manager Networks.

4.5 On-the-Job Training

Routinely, RMT will provide on-the-job training for junior or entry-level staff. This includes sending the trainee along with senior-level or project management staff to complete and learn about a specific project or task. This ensures that the training-level staff understand that quality starts from the beginning of the project and is important at every step. Furthermore, pairing entry- and senior-level staff provides professional mentoring by senior-level staff and promotes teamwork.

4.6 Educational Opportunities

RMT offers to reimburse employees for a portion of the costs for courses that relate to an employee's current or potential work assignments that will result in increased ability to deliver services to clients or increase the employee's value to RMT. Short courses on specific topics may also be attended by RMT employees to maintain awareness on the latest environmental advancements or regulations.

4.7 Professional Registration and Certification

RMT encourages professional registration or certification by providing the necessary qualifying experience under the direction of registered and certified professionals, and expects each qualified professional to complete their professional registration at the earliest opportunity. Responsible direction of work in some technical areas requires registration or certification under state laws. Professional certification indicates that the individual will be held to a high standard of ethics, integrity, and quality.

Section 5
Procurement of Items and Services

RMT often utilizes subcontractors to perform specialty technical services and to supplement RMT's expertise. The amount of subcontract work for each project is variable. RMT's subcontracts can be generalized into three different service sectors: geotechnical work, professional/expertise services, and technical services. Geotechnical work includes drilling, Geoprobe® sampling, intrusive sampling, and testing services. RMT also subcontracts for the specialized services of licensed professionals whose unquestioned judgment is required by contract or requested in preparation and support of litigation. Examples include doctors, lawyers, college professors, etc. RMT's subcontracts are often with firms that provide routine technical services, including general consulting, laboratory services, emission testing, surveying and aerial mapping, asbestos surveys, and other low-risk applications.

Contracted services undergo a selection and approval process, and all subcontracted services are provided under contractual arrangements, including terms and conditions, and insurance requirements specified by RMT. Procedures for these activities are documented in written company policies and guidance manuals, such as RMT's proprietary and confidential Project Management Handbook.

The quality system for procurement of items and services from outside vendors begins at the solicitation phase. The technical performance standards and quality objectives are identified, and a list of qualified vendors is compiled on the basis of documented qualifications and past experience. Scopes of work, schedules, and performance expectations are provided to each vendor at the time of proposal solicitation. Proposals/Quotations are reviewed to ensure that all tasks and performance expectations have been included. Vendors are selected on the basis of price only after the ability to meet qualifications and specification requirements has been verified. Inspections or audits of vendor facilities and operations are conducted when required by project quality assurance programs.

Some environmental projects are performed under client and/or regulatory requirements, wherein some or all service and materials suppliers must operate under a QMP, QAPP, or other quality documentation. For these projects, requirements for completion of such quality documentation prior to delivery of services and materials are described in requests for proposals/quotations provided to prospective vendors. Quality documentation from selected vendors is reviewed by appropriate technical staff, as designated by the PM or CSM. Services and products are not accepted from vendors to such projects until required quality documentation meets project requirements.

The items and services provided by vendors are observed/reviewed by the project CSM, PM, or designee prior to acceptance. Vendors are notified of identified technical or quality deficiencies and instructed to implement corrective action with oversight by the CSM or PM. The CSM and PM have authority to stop vendor services or item deliveries pending corrective action. They may also refuse to accept work products or items and may terminate a vendor if corrective actions are not satisfactory or if substandard performance persists.

5.1 Subcontractor Quality Assurance

RMT maintains a subcontractor database for assisting Project Managers in selecting an appropriate subcontractor. The information available to Project Managers includes subcontractor experience, financial stability, H&S training, program management, and capability to perform the full scope of the contract. This includes, but is not limited to, the contractor's ability to meet the specifications of the contract as it relates to the quality of their work; the time frame for completing their work; guarantees of their work; and the performance of their work in accordance with all local, state, federal, and client H&S requirements applicable to H&S exposure for specific RMT projects.

RMT prequalifies all subcontractors based on a review of information provided by the subcontractor regarding their financial background, insurance coverage licenses, registrations, permits, certifications, experience, and health and safety programs. The prequalification includes requirements for the submittal of the subcontractor's employees' 40-hour health and safety training certificates, and 8-hour refresher training certificates. RMT has an ongoing program to review subcontractors' performance and maintain current information on subcontractors' insurance coverage, financial condition, and compliance with health and safety requirements.

The initial review includes assessment of applicable quality-related documents. If quality concerns are identified through project activities, these issues are immediately communicated to the contractor and addressed through specific actions to replace the questioned information and then implement a specific program to improve the procedures. If a pattern of performance problems are identified related to quality, safety, or other job-related indicators, the contractor is notified. If an acceptable improvement plan is not presented, these subcontractors are removed from the subcontractor database and not used for further RMT project work.

While competitive costs are a consideration in subcontractor selection, RMT also places a high value on our partnerships with subcontractors who have demonstrated an ability to be responsive and provide quality services on projects. The subcontractors who assist on projects are selected based on our long-term working relationships and their consistent delivery of responsive quality services.

RMT's subcontractors are required to have an established quality control procedure. Coordination of quality issues and procedures with subcontractors is provided by the Project Manager and selected RMT staff members who have the knowledge and experience in the technical area of the subcontractor. These individuals provide liaison to ensure that the subcontractor has a thorough understanding of the needed tasks, and they also provide a review of the procedures used by the subcontractor to ascertain that the work is performed in accordance with the accepted practices. Subcontractors perform the quality assurance function for the assigned tasks in accordance with their established quality assurance programs, which are then reviewed by the appropriate RMT staff member.

In addition to our subcontractor certification system, subcontractors' performances are monitored and feedback is given to the firms on their performance. This feedback mechanism improves communication with subcontractors and provides areas for improvement that meet RMT's and our clients' quality standards. After completion of the project, the Project Manager, along with the project team, will use the subcontractor evaluation form to rate the contractor's performance. The form will be completed online and will provide an instant grade for a subcontractor.

A subcontractor's grade is based on scores given for the following items:

- Preparation level
- Quality of work performed
- Understanding of work requirements
- Communication with RMT staff
- Timeliness of work performed
- Completion of work in accordance with local, state, and federal H&S regulations
- Overall work habits

The subcontractor evaluation form is completed by the Project Manager and/or his/her appointed project staff based upon observation of a contractor's project work performance. Upon completion, the data in the form are communicated to a pertinent contractor(s).

5.2 Subcontractor Oversight and Performance

Implementation of any construction activity begins with a clear understanding of a client's specific needs, objectives, and unique site and operational considerations. The impact of the construction activities on the facility's operations is integrated into the development of a practical design approach and project schedule. As part of this process, RMT is especially adept at identifying cost-saving measures for the facility, such as treating wastes in-line, minimizing

waste generation, identifying other potential ongoing sources, and prioritizing remedial construction efforts.

RMT has an extensive program to select subcontractors for projects. First, RMT evaluates the pricing structure, schedule requirements and task phasing, health and safety considerations, and methods to facilitate a cost-effective and efficient award of construction work. With this information, a project manual is developed that includes an invitation to bid, a bidding schedule, instruction to bidders, bid terms, client-approved agreement and terms and conditions, performance and payment bonds, revised construction drawing and technical specifications, and other required exhibits. Upon approval from the client, the project manuals are issued for bid to each approved, qualified bidder.

RMT then performs subcontractor prequalification and solicitation. The primary elements for selecting subcontractors are as follows:

- The ability to ensure effective health and safety and environmental programs
- The availability and quality of resources, management, labor, and equipment
- Previous successful experiences on similar projects
- Recommendations from RMT and RMT's clients
- Review of present and past financial conditions
- Insurance and bonding capabilities
- Appropriate permits and licenses from local, state, and federal authorities

RMT then manages the bidding documents, conducts a prebid conference, and reviews and evaluates bid proposals. RMT may also conduct additional investigations or telephone interviews that are necessary to assist in the bid evaluation and to further establish the responsibility, qualifications, and financial ability of subcontractors.

RMT's construction management services include the administration and management of construction, the oversight of the subcontractor's adherence to drawings and specifications, the verification and approval of the subcontractor's progress payment request, the review of the subcontractor's progress schedules, assistance in interpreting contract documents, and confirmation that materials meet contractual quality standards.

RMT has provided environmental construction management services for clients in a variety of service areas, including forest and paper products, metals, chemicals, oil and gas, textiles, commercial solid and hazardous waste, government, and others. This depth of experience provides us the knowledge to understand how small changes can affect a client's entire facility.

Construction implementation is carried out by experienced construction managers, engineers, cost estimators, and technicians.

RMT's construction services include expertise in the following areas:

- Closure of RCRA hazardous waste treatment, storage, and disposal facilities
- Corrective action for RCRA solid waste management units
- Remediation of CERCLA sites, including National Priority List (NPL) sites and Removal Action (RA) sites
- Construction and/or remediation of nonhazardous waste landfills, lagoons, and impoundments
- Implementation of conventional and innovative environmental technologies, including waste treatment, groundwater pump-and-treatment systems, soil vapor extraction, air sparging, hydrodynamic cutoff and recirculation systems, bioremediation, enzyme treatment of soil and sludge, chemical fixation, thermal treatment, wastewater treatment, slurry walls, composite liners and caps, etc.
- Construction and startup of remediation facilities and equipment
- Sludge removal, dewatering, and solidification
- Sediment management systems, including in-place treatment and capping
- Underground and aboveground storage tank removal, abandonment, remediation, and installation.

Section 6
Documents and Records

Quality requirements for project-generated documents and records are determined during the project planning phases. The CSM and PM identify the types of documents, and the related retention, security, and storage requirements that may be applicable to a particular project; requirements are then documented, in accordance with project specifications, and transmitted to project staff.

Project documents, including reports, memoranda, databases, *etc.*, are generated by the project staff that is responsible for preparing those work products. During the project planning process, the CSM and PM determine the process for preparing, reviewing, approving, issuing, and revising documents. Final documents will not be released until the documents are determined by the author and PM to accurately reflect completed work and not until they have been reviewed by the CSM. Depending upon the topic involved, this assessment may be a simple review or may involve a detailed technical review by a senior review team that is identified during the planning phase. Other reviewers with specific technical expertise are typically designated by the PM or relevant group leader. Deliverable documents must be signed by the author, PM, and appropriate QA/QC staff, signifying that the contents have been reviewed and meet project quality objectives.

The proper maintenance of project files is essential to executing work tasks efficiently, managing loss prevention, and maintaining data quality objectives.

The RMT Records Management Department has developed systems to allow for efficient and effective management of information. Through the use of our databases, all users are able to obtain specific information related to proposal, project, contractual, and administrative work. The primary goal of RMT's "Records Management Program" is to ensure that all records are handled using professionally and legally accepted records management practices. Through concise, well defined policies, these practices ensure (1) the uniformity of records handling, (2) cost-effectiveness, (3) security of information, and (4) disaster recovery capabilities.

More specifically, through these policies, uniform records handling provides the following:

- Protection against litigation
- Invaluable assistance during any legal event process
- Compliance with detailed record keeping requirements mandated by government regulations (local, state, and federal)

- Important marketing and public relations assistance/information
- Easy access to project-related records
- Records that are important to RMT's history

6.1 Records Management Practices

Background knowledge of some basic RMT records management practices is essential. Following are some of these practices:

- Open or nonconfidential records are maintained in an accessible area of the production office performing work on the project. Secured rooms and/or locked cabinets are used for confidential records.
- MIFs and PIFs are submitted to the Madison Records Center for entry into the records database.
- Reports generated for RMT clients are catalogued and entered into the reports database.
- Current project-related records are housed in local office records centers (until project closeout) and are filed by project number. This ensures that RMT who are staff working with project-related records have adequate access.
- The project records checklist is designed to give guidance to project staff on project-related records during the project and at the time of closeout. Project-related records are not kept permanently at an employee's workstation. This limits access by other RMT staff and makes it difficult to apply records management practices.
- Records audits can be requested at any time.
- For each set of project-related records, six primary categories of information are created and color coded: (1) Communication, (2) Financial, (3) Management, (4) Proposal, (5) Technical, and (6) Construction Management.

6.2 Retention of Company Records

Records are retained, not only for normal company operations and contractual obligations, but also to meet local, state, and federal laws and regulations. A records inventory is used to establish a detailed records retention database, which is the foundation for RMT's records retention activities. The records retention database is a comprehensive listing indicating the length of time each record is to be maintained and whether it will be microfilmed and/or destroyed. All records are retained in original and/or micrographics format until expiration of the retention periods. The records retention database provides guidance on how long records should be kept and when/if they should be destroyed.

6.3 Records Center

Records centers in all RMT offices allow easy access to current records. The Records Center Procedures Manual is the reference manual/guidance document for records center operations company-wide. Often, off-site storage is used for those records that are referred to infrequently, those that are too voluminous, or those that are too valuable to retain in local records centers. Records eligible and/or mandated for off-site storage are listed in the records retention database and the Records Center Procedures Manual. Specific advantages of off-site storage are as follows:

- Lowers storage costs
- Provides a controlled environment
- Provides for security of corporate vital records
- Is crucial for disaster recovery
- Frees up floor space within RMT records centers
- Reduces the need for costly on-site records equipment

The records for many closed projects are stored off-site in special records handling facilities. Records are retrieved quickly from these facilities on an as-needed basis by RMT's records center staff. Careful planning is important so that requested records are available when needed. Records retrieved from off-site storage are promptly returned to the records center to avoid lost records. Should specific records be needed for another project, photocopies are made of appropriate records and kept with the new project.

6.4 Destruction of Records

RMT records on any media (*i.e.*, paper, microform, magnetic, *etc.*) that are no longer needed for company operations, or that are not required to be kept by regulatory authorities are destroyed on a mandatory, systematic, and consistent basis. This systematic destruction of records is important in that it disposes of records in an orderly manner, frees up costly storage space, and makes room for the many new records generated each year.

6.5 Security of Records

The information that RMT acquires in the course of its activities is a valuable resource. Security measures are in place at all RMT office locations for the protection of records, with special emphasis on valuable and confidential records. All valuable records, including original copies of plans, drawings, and specifications, are stored carefully when not in use. Even though valuable records can be insured, they are irreplaceable if lost or destroyed, and must be safeguarded.

All papers, records, plans, drawings, specifications, client lists, computer programs, computer disks, library material, and other material used at or for RMT are the property of RMT and are considered confidential.

An important security measure requires that all RMT employees sign an Employee Confidentiality Agreement, which communicates responsibilities and obligations to all RMT employees who have access to RMT records.

All RMT employees are responsible for the security of the records that they create, receive, and/or manage. All RMT records (not just project-related records) are considered to be confidential. Additionally (and separately), certain projects are designated and marked as "confidential" and require special records handling. These files are kept in locked file cabinets, and Project Managers are responsible for maintaining the confidentiality of the project and the client name within the marketing arena. Only individuals given advance security clearance for a particular project file are allowed access to these confidential files by records center personnel.

Project staff is responsible for following the Project Manager's lead in records handling and confidentiality. All staff has the responsibility of notifying the Records Management Manager when the security of records is not being properly maintained. All records generated at or by RMT staff belongs to RMT.

6.6 Reports Program

RMT produces project reports (RMT Project Reports) for its clients during, or at the conclusion of, most projects. Information about these reports is entered into the reports database, which allows RMT staff efficient access to comprehensive historical and/or marketing-related information. Selected information gathered from these RMT project reports for the database includes name of the report, version, client name, project number, site location, date of report, confidentiality, Project Manager, key staff, and copy location. Project Managers ensure that working copies and finals are handled according to guidelines established within the Records Management Program, as follows:

- Originals of working copies (until the creation of the final) or the originals of finals are filed in locked storage areas within the records center.
- One file copy of a working copy or a final is given to the records center for the records center's report collection.
- The working copy original and file copy are pulled, destroyed, and replaced by the final report when it is generated.
- Copies of reports needed for the creation of new or revised reports are made from the original.

- Records Center staff should be contacted for assistance in searching the reports database for information concerning reports.

6.7 RMT Records Management

The Records Management Manager is responsible for the protection of the organization's assets through systematic review and control of information. This protection is provided through the development and implementation of policies and procedures that establish consistency with the Records Management Program. The Records Management Manager works closely with the user base to evaluate, research, and recommend information management solutions. Specific functions and duties are as follows:

- Operates and maintains records management systems, including creation, receipt, storage, retrieval, and disposition.
- Develops, plans, and designs the organization's vital records protection, disaster protection, and recovery efforts.
- Ensures adherence to legal requirements that affect the information of the organization or the transfer of information in the organization.
- Provides expertise and guidance to others throughout the organization on records management services.
- Coordinates staff and equipment resources to provide efficient usage of information throughout the organization.

Section 7
Computer Hardware and Software

RMT's quality system is dependent upon a strong Information Technology (IT) system that is capable of supporting technical data management interpretations and presentations, as well as communication among company offices and with clients and regulators. The management of information technology, defined by its hardware, software, and communications components, is critical to the achievement of the quality management of goals and the success of the company.

The IT Department is responsible for managing the company's information technology components. In that role, the IT Department has established and documented information technology policies to manage and ensure that information technology components integrate properly into the infrastructure. The IT Department has developed IT system policies that are published in the confidential RMT Policy Manual available only to authorized RMT employees. This includes computer software used for design, data handling, data analysis, modeling of environmental processes and conditions, operations, or process control of environmental technology systems, and databases containing environmental data.

The centralization of IT functions, especially the control of hardware and software that is used in the delivery of services, is the primary mechanism for ensuring that the components of the system are compatible and meet user needs and standards. RMT corporate policy prohibits the installation or use of computer hardware without the IT Department's approval. The IT Department procures, configures, and verifies the performance of computer systems. Systems must meet equipment and performance specifications developed and standardized for RMT applications. Special equipment needs are communicated to the IT Department by CSMs, PMs, or Team Leaders. The IT Department then identifies performance characteristics required to meet needs, and procures and installs the hardware. All new computers and newly installed hardware are performance-tested by the IT Department prior to release for use. System specification information for each computer system is entered and maintained in an IT Department database that is used to track maintenance and modification histories. The centralized nature of RMT's IT Department also relieves RMT management and project staff from other hardware and software QA responsibilities other than using the provided equipment and applying upgrades when notified.

RMT corporate policy prohibits the installation or use of computer software without the IT Department's approval. This policy applies to corporate productivity software and software used for specialized environmental data applications. Primary company productivity software, such as that for word processing, spreadsheets, electronic mail, database management, drafting,

and project scheduling applications is researched and tested by the IT Department to ensure compatibility with existing hardware systems and industry standards prior to acceptance for use within the company. Existing primary hardware and software systems are periodically reviewed and upgraded as needed to continue to meet user needs. Reviews generally are prompted when reported experience with the systems indicates inefficiencies, incompatibilities, or other characteristics that interfere with the ability to achieve company or project objectives or operations goals.

Other specialty software, such as environmental data management packages, geographic information systems (GISs), and project-specific software, is evaluated by the IT Department with input from knowledgeable technical workgroups or Project Managers prior to acceptance and integration into the RMT IT system. Technical managers typically identify project- or work area–specific hardware or software needs, and then work with the IT Department to identify the appropriate system(s) with respect to technical capabilities, compatibility with existing systems, reliability, and applicability.

The operating system software is installed using a disk imaging technique that ensures the consistency and high quality of operating system software. Most application software is installed using a commercially available software distribution system, which installs the software in the same way on each computer. The distribution application also logs license information for control purposes. Some applications, by their very nature, require custom installation. The custom installation is preformed on a test system before being performed on a production system.

The IT Department is responsible for ensuring that installed software is authorized and properly licensed. The IT Department also conducts audits of the computers within the company at least annually. Software audits of each computer and server are conducted remotely from the IT Department using commercial software to document the applications installed on each computer. These are then compared with the master list of software licenses held by the company. The license database is maintained by the IT Department.

RMT computer system users are responsible for identifying performance failures of hardware and software for which they are responsible or are using, and then notifying the IT Department. Failures typically are identified by observation of system behavior and quality control checks of system outputs. RMT's IT Department operates a centralized Help Desk facility, accessible by telephone or e-mail, to provide support for resolving hardware and software problems. Help Desk staff are trained to identify sources of problems, and support the user in making corrections. If necessary, Help Desk staff can access computer systems through the corporate network and make direct repairs of software problems. When hardware and software repairs

cannot be completed as described above, the systems are shipped to the IT Department for maintenance. Records of maintenance and repairs are maintained by the IT Department.

Responsibility for ensuring that computer hardware and software meet the technical requirements and quality objectives for environmental programs resides with Project Management and IT Department staff as follows:

- Project staff (CSM, PM, technical staff)
  - Identify needs and prepare specifications.
  - Develop specific project applications.
  - Test outputs before general project use.
  - Document applications, performance criteria, and instructions for proper use.
  - Identify evidence of failure during use.
  - Validate outputs and identify quality failures.
  - Implement QA/QC protocols required by project-specific quality documents (*e.g.*, QAPP).
  - Report failure to management and IT Department.
- IT Department
  - Research and test new hardware and applications to ensure compatibility with specifications and systems.
  - Troubleshoot and correct or support correction of quality failures.
  - Maintain hardware, software, and repair/maintenance records.
  - Compile and maintain documentation of applications and use and evaluation procedures.
  - Identify and verify technical needs.
  - Review and approve special applications used for multiple projects.
  - Verify proper application documentation.
  - Receive and compile reports of quality failures.
  - Support project staff with failure resolutions.

The emphasis on security related to the IT system has dramatically increased in the past several years. RMT has initiated a number of procedures to increase security as follows:

- Firewalls have been emplaced to prevent illegal entry into the system.
- Virus protection is installed on all systems.

- All inbound and outbound e-mail is scanned and filtered.
- Security activity logs are routinely reviewed to look for signs of malicious activity

Section 8
Planning

8.1 Overview of Planning Process

Project planning is a key component to successful implementation of environmental projects. During project planning, project technical and quality objectives, the appropriate type of data, and acceptable levels of uncertainty that will form the basis for establishing the quality and quantity of data needed to support decisions are established. The guidance and procedures used are dependent on the particular environmental program for the types of services provided and the projects performed.

The planning process varies with the type of project and the project objectives. For many projects, project goals, objectives, and issues; regulatory objectives and requirements; and related data quality objectives are identified and quantified during development of the project scope of work, which is the basis for the proposal. Regulatory guidance and specifications and client requirements typically dictate the form and content of these plans. For these projects, the rationales for critical strategies, types, quantities, use, and performance criteria for project data; QA/QC activities; data collection, validation, and use activities; and preliminary budgets and schedules are documented in the project proposal.

For projects in which formal workplans are prepared, these same components are documented in the workplan. Workplans are typically prepared when more documentation of strategies, procedures, QA/QC, and schedule is required, and when activities are more complex than can be supported by planning based solely on regulatory policies and guidance and other standard protocols. Planning for these projects may be based on standard practices and regulatory guidance, policies, etc., or on the Data Quality Objectives (DQOs) process. When the DQO process is used, the allowable uncertainties for applicable data and decisions are defined, and DQOs are developed to guide the planning process.

Some environmental projects require more extensive documentation of the QA/QC program. A QAPP is a technical planning document that defines the objectives; organization; field, laboratory, and data methods; and the QA/QC activities necessary to meet the goals of an environmental project. Responsibility for the preparation and submission of a QAPP lies with the project PM. All key project participants, including the QA/QC staff, project technical staff, field staff, client, laboratory, etc., are involved in the development of project-specific DQOs and the selection of technical approaches, procedures, and QA/QC protocols. The QAPP is then prepared according to EPA guidance: EPA guidance for quality assurance project plans, EPA

QA/G-5, and guidance from the applicable EPA regional office (*e.g.*, Region 5 instructions on the preparation of a Superfund division quality assurance project plan, June 2000). The QAPP is submitted to the project QA staff for review and approval, and then to the CSM and PM for critical review, approval, and sign-off. It is then submitted to the Remedial Project Manager for approval.

Identification of criteria for determining if environmental data meet performance criteria for end uses is a part of the planning process. Regulatory requirements and criteria and standard practices define the acceptance criteria, unless other specific criteria are defined in the QA/QC portion of the plan. The measurement of performance is typically acceptance of the data, and the conclusions and decisions based thereon, by the regulatory agency and clients. For projects requiring a QAPP, data acceptance criteria are defined in the QAPP.

8.2 Project Management System

Project planning is accomplished within the project management system of RMT. This process involves the CSM for strategic direction, the Project Manager for detailed project planning, Quality Assurance (QA) and Quality Control personnel for review, and input of key staff. The key elements to this system include the following:

- Project scoping
- Quality assurance/Quality control plan
- Project kickoff meeting
- Project execution
- Project monitoring
- Project closeout

8.2.1 Project Scoping

The management and coordination of the project team begins with project planning and development. The process begins with the initial project scoping meetings, where key project team members are involved in defining the project objectives, approach, and level of effort, and in establishing schedules, including project milestones and budgets. The scoping meetings involve the CSM, the Project Manager, and key project team members, including subcontractors, as required to accomplish the project.

The CSM, Project Manager, and selected team members then coordinate with the client to verify that the scope of work, design criteria, delivery schedules, and budget meet the client's needs. The elements of the workplan are modified as necessary to reflect

changes agreed to in the process. The workplan is then distributed to all members of the project team.

8.2.2 Quality Assurance/Quality Control Plan

A written QA/QC plan is developed for all new projects. This plan establishes the roles and responsibilities for each technical element of a project, and confirms the commitment of technical resources to a project. Senior technical staff provides oversight on the logic and approach used to achieve the project objective, and the adequacy of the data used to reach conclusions and form recommendations. QA review also ensures that the work performed is consistent with the approved workscope, budget, and schedule, and the client's preferences. QC review is used to ensure the consistency of the work product with respect to RMT's standards of practice and to ensure that any calculations are correct.

8.2.3 Project Kickoff Meeting

After project authorization and development of the QA/QC plan, a project kickoff meeting is held with all project team members to review the project objectives, approach, scope, budget, and schedule, so that all are aware of what is required to accomplish the project to meet the client's needs.

8.2.4 Project Execution

Cost-tracking, budgeting, and scheduling for projects, including subcontractors, are the primary responsibilities of the Project Manager, and are accomplished by establishing and maintaining effective communication among all project team members throughout the project. Project workplans are prepared by staff under the Project Manager's direction, and include budget plans and an overall project schedule, which shows schedule constraints and project element interrelationships. Workplans are prepared on a staff hour/week basis for resource groups, or for individuals.

During project execution, real-time reporting of project costs versus budget and schedule progress is communicated to all members of the project team, including subcontractors. In addition, during the execution of the project, communication channels with key points of contact among the entire project team and with the client are defined and maintained. For example, during a project's investigation and construction phases, it is standard procedure for field staff to report a minimum of twice daily to a designated office contact in order to review progress and discuss changes in conditions and any adjustments necessary to meet the project objectives.

8.2.5 Project Monitoring

Project schedules are monitored to assure the client that the project will be completed on time. In addition to the experience of our staff on environmental projects, RMT may also utilize computerized scheduling software to assist in schedule development, reporting, and management. RMT employs a number of PC-based scheduling programs, including Primavera, Microsoft Project, and Milestones. This scheduling approach, coupled with our Deltek Vision accounting system, enables the Project Manager to prepare analyses of value-earned schedules. RMT uses Deltek Vision project software to track and monitor the budget and cost for each project. RMT staff complete timesheets electronically on a daily basis. Project Managers receive project financial progress reports on a weekly basis.

The Project Manager, with the assistance of the Project Coordinator, monitors the status of each project through online financial reports. Thus, the project team has the ability to ascertain the project expenditures against the budget at any given time. Time sheets are posted weekly, on Saturday, so that summaries of each previous week's labor are available each Monday morning. Any problems with the project budget or schedule are communicated to the CSM, and an internal action plan is developed. This action plan will involve a review of the planned budgeting and scope compared to actual numbers and tasks. Once the critical issues are identified, the client's Project Manager will be contacted to discuss methods to address the issue. RMT's objective is to identify budget and schedule changes to our client during the month in which they occur.

8.2.6 Project Closeout

Upon project completion, a project closeout meeting is held with all members of the project team to review the team's performance on the project and to identify areas meeting expectations or needing improvement. The results of this meeting are included in the project files for future reference. In addition, at this time, the Project Manager verifies that all documents and records are properly organized and sent to the Records Management Department for proper archiving and storage.

Section 9
Implementation of Work Processes

RMT's commitment to quality is present through all phases of project implementation. Quality is ensured at the beginning of the project during workplan preparation. In addition to an approved workplan, a QA/QC checklist or plan is also required. The QA/QC checklist or plan defines the QA/QC responsibilities of the various technical staff involved in the project. Project Managers conduct kickoff and periodic update meetings with key technical staff to discuss and resolve project-related issues. The periodic meetings may cover a wide range of topics, including project objectives and progress. Project progress may also be observed through various scheduling software to increase project efficiency and staff accountability.

9.1 Workplan Preparation

Project workplan preparation occurs during project startup to ensure that the project can be budgeted and organized. Workplans that were prepared during earlier phases of the project are reviewed and finalized for the project workplan. In addition to the technical work, the following tasks should be considered and budgeted:

- Project startup activities and workplan review. This task culminates in a project kickoff meeting with project staff.
- Subcontractor, laboratory, and consultant costs.
- Equipment rentals.
- Project review meetings during the course of the project.
- Project management and administrative support time.
- Preparation, review, and implementation of health and safety plans.
- Quality assurance/quality control (QA/QC) plans.
- File close-out, invoicing, project summary preparation, and workscoping/estimating of next phase, if applicable.
- A contingency fund based upon project complexity and degree of uncertainty in scope and/or schedule.

Senior technical staff who have not been involved in this proposal process are included in the early phases of startup to help prepare a detailed scope of work and cost estimates.

Workplan preparation benefits the project in the following ways:

- Project phases and design concepts are easier to manage because their objectives are quantitatively and qualitatively defined.
- The project schedule identifies the dates on which the deliverables are due.
- Recognition of changes in scope is easier because the primary and secondary objectives have been quantitatively and qualitatively defined.
- Guidelines for future actions are established up front.
- Performance standards to measure results are provided.

9.2 Operating Procedures

Operating procedures that may be used on a particular project may be derived from a number of sources, including published regulatory agency policies, procedures, and guidance; standards and procedures published by nongovernmental organizations; and procedures developed by RMT. When standard procedures from regulatory agencies and nongovernmental organizations are used, the PM or designee is responsible for obtaining, verifying, and distributing the latest version/revision of the procedure to the affected project team members.

Preparation of project-specific procedures is the responsibility of the project PM or designee, with review and approval by the Technical Resource Manager. Authors are selected based on appropriate technical expertise and experience with the procedure(s) being documented. Procedures are written and formatted according to project-specific format requirements. Draft procedures are peer-reviewed and modified as needed. A second review for completeness and clarity is then performed by a less experienced staff member who is likely to use the procedure. When a project QA structure has been created (*e.g.*, for projects requiring a QAPP), the project QA reviewer must also review and approve project-specific procedures.

Procedures are periodically reviewed by senior technical staff and updated as necessary to reflect changes in regulations or technology. Obsolete procedures are removed and superseded with revised updated procedures, as necessary.

9.3 QA/QC Project Plan

9.3.1 Definitions

- **Quality Assurance (QA):** The planning and assignment phase by the Project Manager, which seeks to ensure confidence that the performed services will satisfactorily serve the intended purpose. QA also includes execution and follow-

up of QC procedures. QA review is typically considered to be conducted outside the project structure.

- **Quality Control (QC):** The technical and administrative review process to document accuracy, completeness, and quality of the project outputs (*e.g.*, reports, plans, specifications). QC also includes peer review. QC reviews are typically considered to be conducted from within the project structure.
- **Procedure:** The steps taken to prepare specific QA/QC project plans as outlined in the following table:

Step 1	(Project Manager) discuss with Resource Manager(s) and/or senior technical staff assigned responsibility for work production and the project QA/QC needs, and identify staff for specific QA and QC responsibilities. The initial meeting may involve more than one Resource Manager and/or Senior Technical Staff, depending upon the project.
Step 2	Prepare QA/QC plan identifying specific individuals with QA and QC responsibilities, and budget hours for QA and QC.
Step 3	Obtain the Project Manager's supervisor's and the CSM's approval of the written QA/QC plan.

- **Technical QA/QC Role:** The Resource Manager, senior technical staff, and technical staff responsibilities for work production and QA/QC responsibilities are categorized by technical discipline of work (*i.e.*, chemistry, engineering, geotechnical, regulatory). Senior technical staff and technical staff have a primary responsibility to perform the following:
  - Assist in the development of the written QA/QC project plan.
  - Provide technical guidance and QA/QC review based upon the written QA/QC plan.
- **QA/QC Assignment Guidelines:** Guidelines that establish the following responsibilities during project startup:
  - Identify level of review required.
  - Identify Resource Manager and senior technical staff who will perform QA/QC reviews.
  - Identify key project issues (technical, management, contractual, health and safety, regulatory relationship, and special liability areas) that warrant particular QA/QC coverage.
  - Identify sealing requirements for the project site and state regulatory agencies.

- Establish Resource Manager and senior technical staff involvement and awareness of projects early in the project and at key milestones throughout the execution of the project.

– **QA/QC Responsibilities:** Work production and review responsibilities, which may change depending on staff capability, staff development needs, and/or organizational changes. The following identifies work production and review responsibilities that are incorporated into the written QA/QC plan:

Responsibilities of the **senior technical staff** or **Resource Manager** are as follows:

- In consultation with the Project Manager, determine work review responsibilities. Senior technical staff and the Resource Manager consult when appropriate for QA/QC.
- In consultation with the Project Manager, determine whether other departments or technical disciplines should be involved in work review even though they are not specifically identified.
- Provide technical reviews to ensure that work is performed according to project-specific planning documents and associated technical guidance documents.
- Review work for consistency and uniformity across departmental, discipline, office, and regional lines.
- Ensure consistency of work product with respect to RMT's standards of practice and office procedures.
- Provide oversight on logic/project approach.
- Ensure that work performed is consistent with proposed workscope.
- Provide oversight on adherence to schedule and budget.
- Approve, sign, and seal reports/plans in particular field of expertise (*i.e.*, P.E., P.G., etc.).

Technical staff has the following QC role:

- Monitor their work performance against work schedule and budgets.
- Notify project and resource management staff immediately upon identifying potential problem in meeting planned schedule and/or budget.
- Notify project and resource management staff when workscope changes are needed.
- Provide logic and approach review checks on technical issues as requested.
- Review computations prepared by other technical staff as requested.

- Provide QC review of work products when assigned and identified in the QA/QC plan

The **Project Manager** reviews all work products. The **Project Manager's** responsibilities are as follows:

- Prepare project QA/QC plan.
- Ensure compliance of project quality control measures with written QA/QC plan.
- Ensure adequate lead times for all QC reviews.
- Ensure that project work outputs meet requirements of the proposal, contract, and workplan.
- Ensure that project work outputs are consistent with client's needs.
- Ensure that client's needs and expectations are met and RMT's business interests are protected.
- Provide input to, and review of, outlines, mockups, findings and conclusions, preliminary output drafts, and final work outputs.
- Sign reports/plans to signify that the QA/QC process has been followed.

9.3.2 Policy

All new projects (including follow-on work for existing clients) require a written QA/QC plan/checklist. Business unit-specific procedures define requirements for approvals for the QA/QC plan/checklist.

- **Environmental:** Approval by the CSM and Project Manager's supervisor and submitted with completed PIF, budget, and schedule prior to project number being assigned and compensation amounts being entered into Deltek Vision.
- **Renewable Energy:** Approval by the Engineering and Construction Quality Control Managers and submitted with completed PIF, budget, and schedule prior to project number being assigned and compensation amounts being entered into Deltek Vision.
- **Construction Services:** Approval by the Engineering and Construction Quality Control Managers and submitted with completed PIF, budget, and schedule prior to project number being assigned and compensation amounts being entered into Deltek Vision.
- **Smartburn:** Approval by the Engineering and Construction Quality Control Managers and submitted with completed PIF, budget, and schedule prior to project

number being assigned and compensation amounts being entered into Deltek Vision

9.4 Kickoff Meeting

A kickoff meeting is the first of periodic project review meetings over the course of the project to discuss and resolve issues, such as the following:

- Quality
- Technical and client concerns
- Regulatory framework
- Budget
- Schedule
- Scope

9.4.1 Participants and Agenda

All projects require a kickoff meeting, which includes key technical staff working on the project and all QA/QC staff(s) as defined in the QA/QC plan. At the kickoff meeting, the following items are addressed:

- Client's requirements and expectations
- Project schedule
- Project budget, outputs, and deliverables
- QA/QC responsibilities
- Project assignments
- Project issues
- Contract requirements affecting implementation of project and subcontractor flow-downs
- Health and safety issues
- Resources available to project staff (*i.e.*, RMT technical experts in the area, other RMT projects similar in nature, etc.)

9.4.2 Periodic Project Progress Meetings

The Project Manager's responsibilities in facilitating periodic project meetings are as follows:

- Prepare and organize in advance.

- Set specific objectives.
- Prepare agenda.
- Set budget for meeting.
- Make assignments for advance preparation.
- Coordinate schedules.

– Make preliminary preparations.
- Start on time.
- Assign billing numbers.
- Assign note-taking responsibilities.
- Lead discussions.

– Review purpose, objectives, and agenda.
- Check for time limitations.
- Ask about suggested modifications.
- Encourage participation by all.

– Reinforce team commitment.
- Review project objective.
- Review team structure and assignments.
- Review budgets and percent complete comparisons.

– Prepare for closure.
- Make assignments (deadlines and budgets).
- Review decisions and agreement.
- Prepare follow-up notes.
- Set dates and times for future meetings.

9.5 Schedule

Scheduling is a key component of planning, management, and control. A project schedule is prepared at project startup and/or prior to the kickoff meeting. Scheduling is necessary to anticipate when specific project resources (such as project staffing, drilling, laboratory work, report writing, client, and internal QA/QC review) are needed. Project success often depends upon the scheduling process used and communication of schedules, both externally to the client

and internally to project staff. The following project scheduling systems may be used depending upon project requirements:

- Microsoft Project & Primavera
- Gant Charts
- Bar charts
- Critical Path Method (CPM)

A scheduling system that provides project data efficiently and effectively is selected. Using a more complex and time-consuming scheduling system than necessary to maximize productivity is avoided.

Section 10
Assessment and Response

This section of the QMP documents how quality is assessed and managed at RMT. Quality assessment is designed to ensure that the quality of procedures and practices within RMT are adequate and effective. Assessment of procedures and practices also provides an opportunity to act upon quality issues or inefficiencies. RMT's assessment of quality is managed at several different levels within the organization. At the basic level, project audits occur on a monthly basis. RMT has three different audit levels, with varying levels of investigation. The audit reports are reviewed by senior staff at RMT to document project progress, quality, and efficiencies. Additional assessment at RMT is completed using the "Six Sigma" Program to improve quality and efficiency within the organization. Six Sigma projects focus on cash flow, return on equity, asset utilization, and customer satisfaction.

10.1 Project Audits

Project audits will be completed as a part of quality assurance to encourage a culture of project forecasting, Project Manager mentoring, and project management system improvement. RMT subscribes to a plan of do, audit, and correct. Project audits accomplish the following:

- Utilization of project management principles and tasks
- Culture of monthly review of project status
- Process improvements
- Increase in system communication

The audit system is composed of three different levels. Level one provides a brief monthly review of all projects that focuses on two parameters, accounts receivable and percent complete. A level two audit consists of an "in depth" review of selected projects. Senior Project Managers view project progress firsthand and ensure that projects conform to the acceptable project delivery and loss prevention practices. Level three audits are a comprehensive review of the project to see how well the project delivery system is working in regard to quality; client satisfaction; and uniformity of practice, delivery system efficiency, financial management, and loss prevention. These level three audits are the primary assessment tool by which the effectiveness of the technical and QA/QC activities on a project is measured.

Depending upon the audit level and outcome, projects may need to be redirected or to be focused anew to complete the project as scheduled and to continue to provide a quality output.

10.2 Six Sigma Program

The Six Sigma Program focuses on process improvements. Six Sigma projects begin with the selection of generic processes or tasks that are completed within the organization for process review. The Six Sigma project review is designed to address cash flow, return on equity, asset utilization, and customer satisfaction. The Six Sigma review process utilizes a great deal of statistics for making recommendations. Therefore, the projects that are selected require a measurable quality or outcome. Following completion of the project review, a summary report is created with a recommendation for task or process improvement. This review is then submitted and presented to senior management for a final decision on changes.

Section 11
Quality Improvement

Quality improvement is the responsibility of all RMT staff. Quality improvement is accomplished as follows:

- Ensure that conditions adverse to quality are
  - prevented;
  - identified promptly, including a determination of the nature and extent of the problem; and
  - corrected as soon as practical, including implementing appropriate corrective actions to prevent recurrence.
- Ensure that corrective actions are documented and tracked to closure.
- Encourage staff at all levels to establish communications between clients and suppliers, identify process improvement opportunities, and identify and offer solutions to problems.

Organizationally, quality improvement is a fundamental concept within the firm that extends from upper management to support staff levels. The President and Business Unit Vice Presidents are responsible for identifying systematic changes that will result in improved quality. This may involve programmatic changes such as implementation of Total Quality Management or Six Sigma, or upgrades in the policies and procedures that document company-wide quality improvement systems.

At the project level, the CSM has overall responsibility for ensuring that quality improvement procedures are followed that meet the systematic corporate requirements as well as project-specific requirements. The Project Manager works directly with staff to ensure that those procedures are followed and to make any corrections necessary.

The first step in improving quality is to ensure that conditions adverse to quality are prevented to the extent possible. The best way to do this is through proper planning and good communication. The Project Manager is responsible for the development of thorough workplans and for establishing and monitoring communication lines among project team members. However, problems that do occasionally occur are most easily corrected if they are identified early on in the process. Therefore, staff is encouraged to report any indications of problems to the Project Manager immediately.

In the event an unanticipated problem develops, the Project Manager is responsible for notifying the CSM, staff, client, and regulators and for developing a plan of action to address

the problem. As part of this process, the initial cause of the problem is identified and changes are implemented to prevent its recurrence. This may include revisions to procedures included in workplans or QAPPs, or clarifications or expansions of certain portions of these documents. In the event that the problem relates to environmental samples being held beyond their holding time and reanalysis is not possible, resampling is performed.